

refraction and not the effect as is generally believed. He quotes authorities to the effect that the difference in structure is present at birth and hence cannot be the result of disease, mechanical pressure, or disuse. He argues that the pumping action of the ciliary muscle is at fault, and that it is this which favors the changes which lead to brachymetropia. He remarks upon some of the causes (strain of convergence, spasm of accommodation, etc.), frequently adduced as leading to myopia, and believes that the progress of investigation has disposed of most of them. He thinks that if sections from the eyes of an individual with monocular myopia were to show a difference in the ciliary muscle on each side, his case would be greatly strengthened. Such cases can assuredly be found, and deserve to be studied pathologically.

**Contusion Hypotony.**—COLLINS (*Ophthalmoscope*, 1916, xiv, 348) discusses that form of hypotony which occurs after contusions of the eyeball without perforation; this form of minus tension is well-known but has been the subject of but little discussion. The duration of the diminished tension varies considerably; in the majority of cases it disappears in a few days; in others not for several weeks; and in some cases it would appear to be permanent. The causes of such hypotony may be various and more than one cause may be active at the same time. When of short duration, it is probably due to increased excretion of the intraocular fluid through the expanded normal channels of exit; or, possibly, to some arrest of secretion from paresis of the vasoconstrictor nerves. When of long duration it may be due to (*a*) the formation of new channels or exit from the anterior chamber either from an internal scleral rupture or rupture of the pectinate ligament; (*b*) the cutting off of blood supply to the ciliary body from rupture of the anterior ciliary arteries; or (*c*) possibly detachment of the pars ciliaris retinae. If extensive hemorrhage into the anterior chamber be present, either the canal of Schlemm has been opened by an internal scleral rupture or the anterior ciliary arteries have been torn across from cyclodialysis. The latter is shown to be the cause if, after absorption of the blood, a portion of the iris has disappeared from view as though an iridectomy had been done. A translucent area appearing after some time just outside the sclerocorneal margin like that in a cystoid cicatrix, indicates an incomplete internal rupture. If the anterior chamber, without extensive hemorrhage, becomes markedly deepened in the whole or part of its circumference there has probably been a rupture of the ligamentum pectinatum, limited to the pillars of the iris, and of the ciliary muscle, prolonging the angle of the anterior chamber outward. If the lens is dislocated laterally, and the retina detached, the vitreous has probably come forward into the circumlental space, and may have dragged the pars ciliaris retinae away from the pigment epithelium.

**Miotics after Mydriatics.**—GIFFORD (*Jour. Am. Med. Assn.*, 1916, lxvii, 112) calls attention to the slight but real danger of exciting an attack of glaucoma by the cycloplegic (homatropin) employed to measure the refraction. He suggests that eserin solution should be instilled not only after the examination, but should also be given for use at home

until the effect of the mydriatic is gone. He advises that the patient receive a small quantity of eserin solution, one grain to the ounce, a drop of which is to be instilled into the eye with the butt end of a match or toothpick. He reports several cases where an attack of acute glaucoma was excited by the cycloplegic.

**Enlargement of the Blind-spot with Gradenigo's Syndrome.**—VERDERAME (*Ann. di ottal.*, 1916, xliv, 538) summarizes Gradenigo's researches which led to the syndrome bearing his name—a disease-complex first described in 1904; the syndrome is characterized by a purulent otitis media with paralysis or paresis of the sixth nerve of the same side. Of the 6 cases observed by Gradenigo, 5 recovered, the other terminated fatally from purulent leptomeningitis. He refers the condition to a circumscribed purulent or simply serous leptomeningitis, which may recover spontaneously, or after operation through the temporal bone, but which sometimes spreads so as to lead to a fatal result. The otitic symptoms are due to infection of the tympanic cavity, which infection may spread to the base of the middle cranial fossa leading to paralysis of the sixth nerve. In a case of this kind, Verderame observed moderate mydriasis, enlargement of the blind spot and slight contraction of the color field; the only ophthalmoscopic signs were hyperemia of the disk and of the retinal vessels. At the end of a week all symptoms had disappeared except the mydriasis; of the significance of which latter symptom the author was in doubt.

## HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF

MILTON J. ROSENAU, M.D.,

PROFESSOR OF PREVENTIVE MEDICINE AND HYGIENE, HARVARD MEDICAL SCHOOL,  
BOSTON, MASSACHUSETTS,

AND

JOHN F. ANDERSON, M.D.,

FORMERLY DIRECTOR OF THE HYGIENIC LABORATORY, PUBLIC HEALTH SERVICE,  
WASHINGTON, D. C.

**Immune Reactions in Scarlet Fever.**—In an earlier work, G. F. and G. R. Dick (*Jour. Infect. Dis.*, 1916, xix, No. 2) reported the results of anaërobic culture from the blood, lymph, spleen, throat and mouth secretions in scarlet fever. Before further study of the organisms obtained in these cultures, they decided to test the various tissues from which these organisms were grown in order to determine whether or not a virus either ultramicroscopic or failing to grow with the cultural methods used was present as the primary cause of the disease. The secondary importance of the organisms obtained could then be demonstrated. The following tests were made on the blood and the results noted: Since antigens in the body fluids